MSH61PI

LGA1155 socket motherboard for Intel® Core™ i3 / Core™ i5 Core™ i7 processors/ Intel® Pentium® series processors

User's Manual

Rev. 1001

Copyright

© 2011 GIGA-BYTE TECHNOLOGY CO., LTD. All rights reserved.
The trademarks mentioned in this manual are legally registered to their respective owners.

Disclaimer

Information in this manual is protected by copyright laws and is the property of GIGABYTE. Changes to the specifications and features in this manual may be made by GIGABYTE without prior notice. No part of this manual may be reproduced, copied, translated, transmitted, or published in any form or by any means without GIGABYTE's prior written permission.

Documentation Classifications

In order to assist in the use of this product, GIGABYTE provides the following types of documentations:

- For quick set-up of the product, read the Quick Installation Guide included with the product.
- For detailed product information, carefully read the User's Manual.

For product-related information, check on our website at:
http://www.gigabyte.com

Table of Contents

Box Contents 4

MSH61PI Motherboard Layout 5

Chapter 1 Hardware Installation 7

1-1 Installation Precautions 7

1-2 Product Specifications 8

1-3-2 Installing the CPU Cooler 11

1-4 Installing the Memory 12

1-4-1 Dual Channel Memory Configuration 12

1-4-2 Installing a Memory 13

1-5 Back Panel Connectors 14

1-6 Internal Connectors 16

Chapter 2 BIOS Setup 25

2-1 The Main Menu 27

2-2 Advanced Menu 29

2-2-1 ACPI Settings 30

2-2-2 CPU Configuration 31

2-2-2-1 Socket 0 CPU Information 34

2-2-3 SATA Configuration 35

2-2-4 Acoustic Management Configuration 37

2-2-5 Intel IGD SWSCI OpRegion 38

2-2-6 Intel TXT(LT) Configuration 40

2-2-7 USB Configuration 41

2-2-8 Super IO Configuration 42

2-2-9 H/W Monitor 43

2-2-10 AMT Configuration 44

2-3 Chipset Menu 45

2-3-1 North Bridge 46

2-3-2 South Bridge 48

2-3-3 ME Subsystem 51

2-4 Boot Menu 53

2-5 Security Menu 55

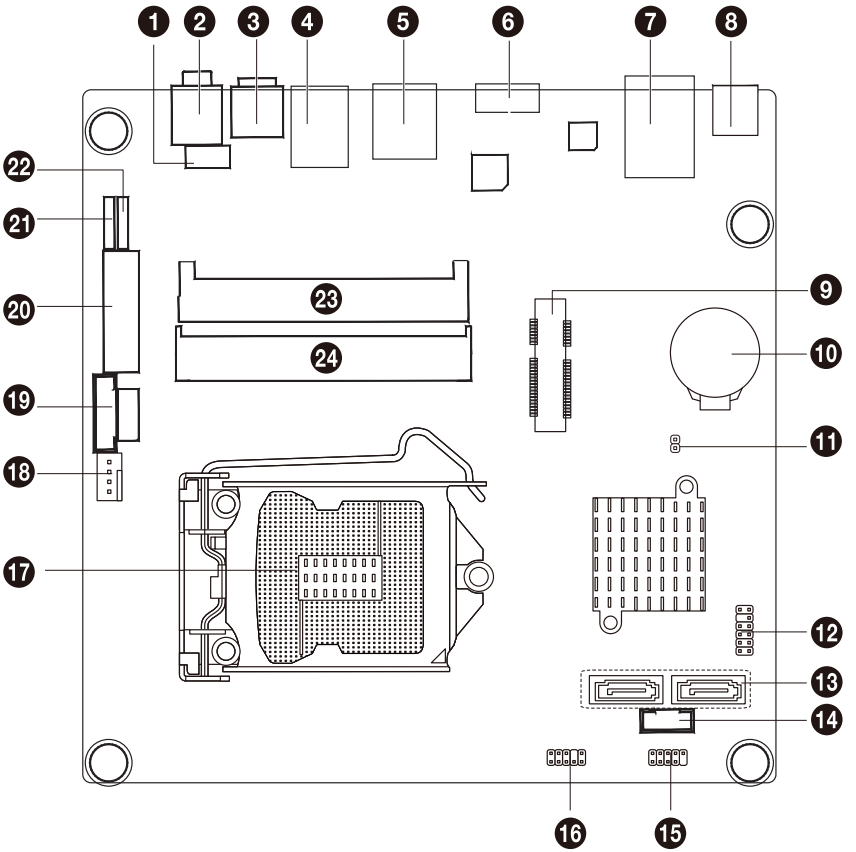
2-6 Exit Menu 56

Box Contents

- ☑ MSH61PI motherboard
- ☑ Driver CD
- ☑ Two SATA cables
- ☑ I/O Shield

- The box contents above are for reference only and the actual items shall depend on the product package you obtain. The box contents are subject to change without notice.
- The motherboard image is for reference only.

MSH61PI Motherboard Layout



Item	Code	Description
1	SPEK	Speaker cable connector
2	LINE_IN	Audio Line In port
3	SPDIF	Optical S/PDIF Out connector
4	R_USB2	USB 3.0 ports
5	R_USB1	USB 2.0 ports
6	HDMI	HDMI port
7	LAN1	RJ45 LAN port
8	DC_IN	DC In power connector
9	MIN_PCIE1	Mini PCi Express connector
10	BAT1	Battery socket
11	CLR_CMOSHW	Clear CMOS jumper
12	F_PANEL	Front panel cable connector
13	SATA1/SATA2	SATA cable connectors
14	HDD_PWR	Hard disk power connector
15	F_USB1	USB connector
16	F_AUDIO1	Audio cable connector
17	CPU1	Intel LGA1155 socket
18	CPU_FAN	CPU fan cable connector
19	FPD	Flat Panel Display connector
20	LVDS	LVDS connector
21	DMIC_CON	Digital Mic connector
22	WEB_CON	WEBCAM connector
23	SODIMMB1	DDR3 SO-DIMM slot (channel B-1)
24	SODIMMA1	DDR3 SO-DIMM slot (channel A-1)

MSH61PI

LGA1155 socket motherboard for Intel® Core™ i3 / Core™ i5 Core™ i7 processors/ Intel® Pentium® series processors

User's Manual

Rev. 1001

Copyright

© 2011 GIGA-BYTE TECHNOLOGY CO., LTD. All rights reserved.
The trademarks mentioned in this manual are legally registered to their respective owners.

Disclaimer

Information in this manual is protected by copyright laws and is the property of GIGABYTE. Changes to the specifications and features in this manual may be made by GIGABYTE without prior notice. No part of this manual may be reproduced, copied, translated, transmitted, or published in any form or by any means without GIGABYTE's prior written permission.

Documentation Classifications

In order to assist in the use of this product, GIGABYTE provides the following types of documentations:

- For quick set-up of the product, read the Quick Installation Guide included with the product.
- For detailed product information, carefully read the User's Manual.

For product-related information, check on our website at:
http://www.gigabyte.com

Table of Contents

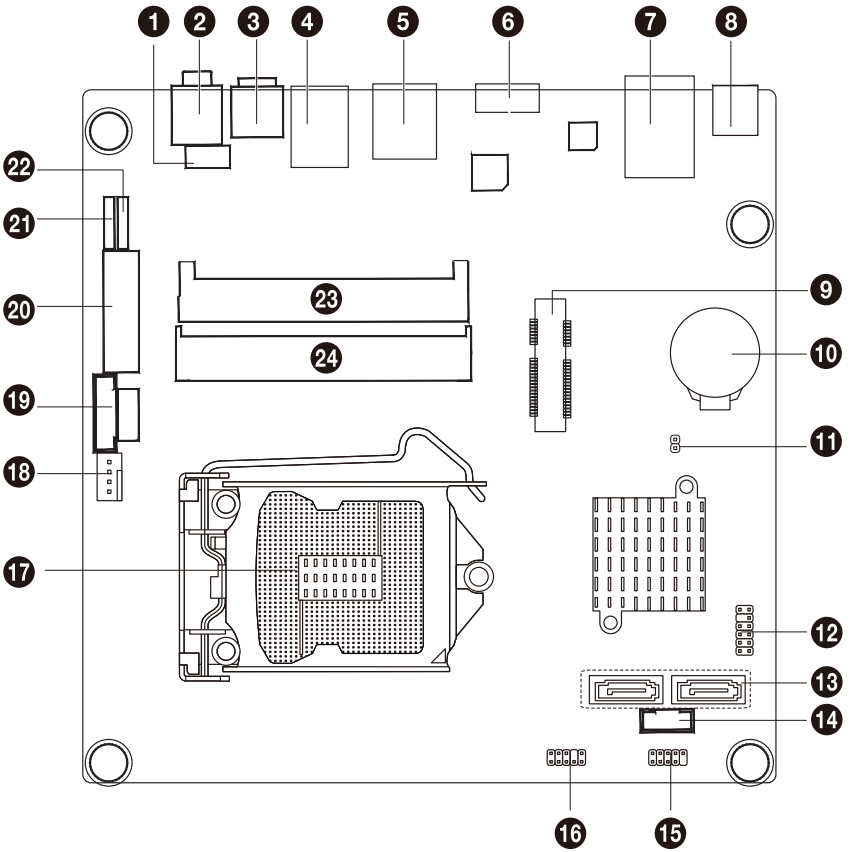
Box Contents 4
MSH61PI Motherboard Layout 5
Chapter 1 Hardware Installation 7
1-1 Installation Precautions 7
1-2 Product Specifications 8
1-3-2 Installing the CPU Cooler 11
1-4 Installing the Memory 12
1-4-1 Dual Channel Memory Configuration 12
1-4-2 Installing a Memory 13
1-5 Back Panel Connectors 14
1-6 Internal Connectors 16

Box Contents

- ☑ MSH61PI motherboard
- ☑ Driver CD
- ☑ Two SATA cables
- ☑ I/O Shield

- The box contents above are for reference only and the actual items shall depend on the product package you obtain. The box contents are subject to change without notice.
- The motherboard image is for reference only.

MSH61PI Motherboard Layout



Item	Code	Description
1	SPEK	Speaker cable connector
2	LINE_IN	Audio Line In port
3	SPDIF	Optical S/PDIF Out connector
4	R_USB2	USB 3.0 ports
5	R_USB1	USB 2.0 ports
6	HDMI	HDMI port
7	LAN1	RJ45 LAN port
8	DC_IN	DC In power connector
9	MIN_PCIE1	Mini PCi Express connector
10	BAT1	Battery socket
11	CLR_CMOSHW	Clear CMOS jumper
12	F_PANEL	Front panel cable connector
13	SATA1/SATA2	SATA cable connectors
14	HDD_PWR	Hard disk power connector
15	F_USB1	USB connector
16	F_AUDIO1	Audio cable connector
17	CPU1	Intel LGA1155 socket
18	CPU_FAN	CPU fan cable connector
19	FPD	Flat Panel Display connector
20	LVDS	LVDS connector
21	DMIC_CON	Digital Mic connector
22	WEB_CON	WEBCAM connector
23	SODIMMB1	DDR3 SO-DIMM slot (channel B-1)
24	SODIMMA1	DDR3 SO-DIMM slot (channel A-1)

Chapter 1 Hardware Installation

1-1 Installation Precautions

The motherboard contains numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Prior to installation, carefully read the user's manual and follow these procedures:

- Prior to installation, do not remove or break motherboard S/N (Serial Number) sticker or warranty sticker provided by your dealer. These stickers are required for warranty validation.
- Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.
- When connecting hardware components to the internal connectors on the motherboard, make sure they are connected tightly and securely.
- When handling the motherboard, avoid touching any metal leads or connectors.
- It is best to wear an electrostatic discharge (ESD) wrist strap when handling electronic components such as a motherboard, CPU or memory. If you do not have an ESD wrist strap, keep your hands dry and first touch a metal object to eliminate static electricity.
- Prior to installing the motherboard, please have it on top of an antistatic pad or within an electrostatic shielding container.
- Before unplugging the power supply cable from the motherboard, make sure the power supply has been turned off.
- Before turning on the power, make sure the power supply voltage has been set according to the local voltage standard.
- Before using the product, please verify that all cables and power connectors of your hardware components are connected.
- To prevent damage to the motherboard, do not allow screws to come in contact with the motherboard circuit or its components.
- Make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
- Do not place the computer system on an uneven surface.
- Do not place the computer system in a high-temperature environment.
- Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
- If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician.

1-2 Product Specifications

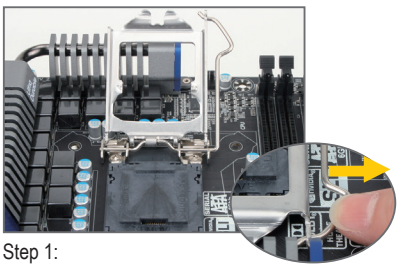
CPU	◆ Support for Intel® Core™ i7, Core™i5, Core™i3 processors/Intel® Pentium® processors in the LGA1155 package ◆ Support Up to 65W ◆ L3 cache varies with CPU
Chipset	◆ Intel® H61 Express chipset
Memory	◆ Dual channel SODIMM DDR3 ◆ Support for DDR3 1333/1066 MHz memory modules ◆ Support Up to 4GB
Audio	◆ Realtek ALC887 codec ◆ High Definition Audio ◆ 2/4/5.1-channel
LAN	◆ 1 x Realtek RTL8111E-VL-CG supports 10/100/1000 Mbps
Expansion Slots	◆ 1 x Mini PCI Express slot
Onboard Graphics	◆ Build in Intel® processor
Storage Interface	◆ 2 x SATA 3Gb/s connectors
USB	◆ 2 x USB 3.0 ports (back panel) ◆ 2 x USB 2.0 ports (back panel) ◆ 1 x USB 2.0 connector (2 via the USB brackets connected to the internal USB headers)
Internal Connectors	◆ 2 x SATA 3Gb/s connectors ◆ 1 x HDD power connector ◆ 1 x CPU fan header ◆ 1 x front panel header ◆ 1 x audio header ◆ 2 x USB 2.0 headers ◆ 1 x Speaker header ◆ 1 x LVDS connector ◆ 1 x FPD connector ◆ 1 x Web CAM connector
Back Panel Connectors	◆ 1 x DC-IN ◆ 1 x RJ-45 port ◆ 1 x HDMI port ◆ 2 x USB 3.0 ports ◆ 2 x USB 2.0 ports ◆ 1 x SPDIF port ◆ 1 x Audio Line In

Hardware Monitor	◆	CPU/System temperature detection ◆ CPU fan speed detection
BIOS	◆	1 x 64 Mbit flash ◆ AMI BIOS
Form Factor	◆	Mini ITX Form Factor; 170cm x 170cm

* GIGABYTE reserves the right to make any changes to the product specifications and product-related information without prior notice.

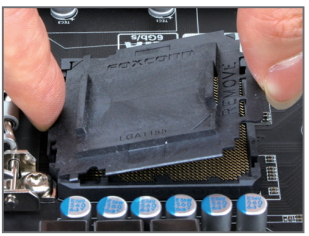
B. Follow the steps below to correctly install the CPU into the motherboard CPU socket.

Before installing the CPU, make sure to turn off the computer and unplug the power cord from the power outlet power plug to prevent any damage to prevent damage to the CPU.



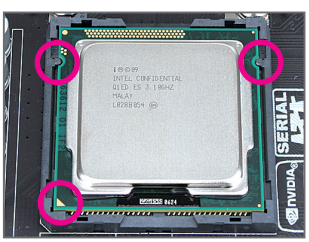
Step 1:

Gently press the CPU socket lever handle down and away from the socket with your finger. Then completely lift the CPU socket lever and the metal load plate will be lifted as well.



Step 2:

Remove the CPU socket cover as shown. Hold your index finger down on the rear grip of the socket cover and use your thumb to lift up the front edge (next to the "REMOVE" mark) and then remove the cover. (DO NOT touch socket contacts. To protect the CPU socket, always replace the protective socket cover when the CPU is not installed.)



Step 3:

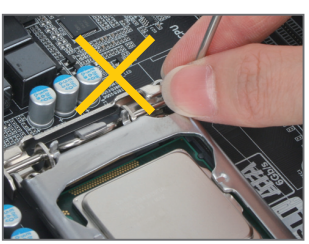
Hold the CPU with your thumb and index fingers. Align the CPU pin one marking (triangle) with the pin one corner of the CPU socket (or you may align the CPU notches with the socket alignment keys) and gently insert the CPU into position.

Step 4:

Once the CPU is properly inserted, use one hand to hold the socket lever and use the other to lightly replace the load plate. When replacing the load plate, make sure the front end of the load plate is under the shoulder screw.

Step 5:

Push the CPU socket lever back into its locked position.



NOTE:

Hold the CPU socket lever by the handle, not the lever base portion.

1-3-2 Installing the CPU Cooler

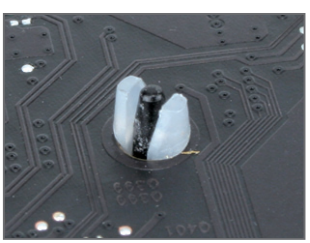
Follow the steps below to correctly install the CPU cooler on the motherboard. (The following procedure uses Intel® boxed cooler as the example cooler.)

Step 1:

Apply an even and thin layer of thermal paste on the surface of the installed CPU.

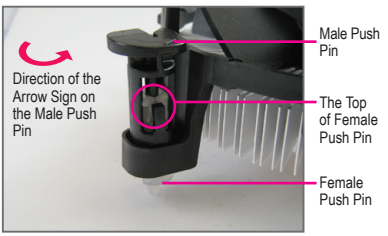
Step 3:

Place the cooler atop the CPU, aligning the four push pins through the pin holes on the motherboard. Push down on the push pins diagonally.



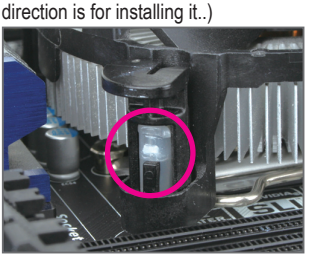
Step 5:

After the installation, check the back of the motherboard. If the push pin is inserted as the picture above shows, the installation is complete.



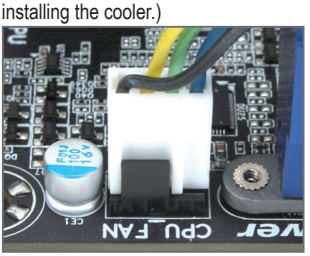
Step 2:

Before installing the cooler, note the direction of the arrow sign on the male push pin. (Turning the push pin along the direction of the arrow is for removing the cooler, and the opposite direction is for installing it..)



Step 4:

You should hear a "click" when pushing down each push pin. Check that the Male and Female push pins are joined closely. (Refer to your CPU cooler installation manual for instructions on installing the cooler.)



Step 6:

Finally, attach the power connector of the CPU cooler to the CPU fan header (CPU_FAN) on the motherboard.

Use extreme care when removing the CPU cooler because the thermal grease/tape between the CPU cooler and CPU may adhere to the CPU. Inadequately removing the CPU cooler may damage the CPU.

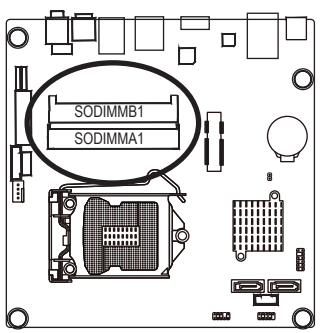
1-4 Installing the Memory

Read the following guidelines before you begin to install the memory:

- Make sure that the motherboard supports the memory. It is recommended that memory of the same capacity, brand, speed, and chips be used.
  (Go to GIGABYTE's website for the latest supported memory speeds and memory modules.)
- Always turn off the computer and unplug the power cord from the power outlet before installing the memory to prevent hardware damage.
- Memory modules have a foolproof design. A memory module can be installed in only one direction. If you are unable to insert the memory, switch the direction.

1-4-1 Dual Channel Memory Configuration

This motherboard provides two DDR3 memory sockets and supports Dual Channel Technology. After the memory is installed, the BIOS will automatically detect the specifications and capacity of the memory. Enabling Dual Channel memory mode will double the original memory bandwidth.
The two DDR3 memory sockets are divided into two channels and each channel has two memory sockets as following:



Due to CPU limitations, read the following guidelines before installing the memory in Dual Channel mode.

1. Dual Channel mode cannot be enabled if only one DDR3 memory module is installed.
2. When enabling Dual Channel mode with two memory modules, it is recommended that memory of the same capacity, brand, speed, and chips be used for optimum performance.

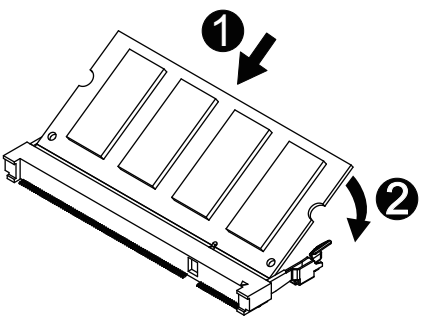
1-4-2 Installing a Memory

Before installing a memory module, make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the memory module.
Be sure to install DDR3 DIMMs on this motherboard.

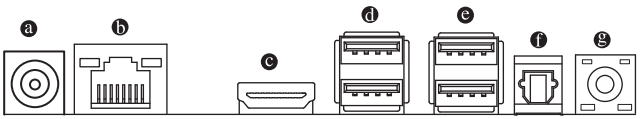
Installation Step:
Installation Step:

Step 1. Align the memory with the DIMM module and insert the DIMM memory module into the DIM slot. Please note that memory module has a foolproof insertion design. A memory module can be installed In only one direction.

Step 2. Push down the memory and seat it firmly.



1-5 Back Panel Connectors



a DC Power Jack

Connect the DC power to this port.

b RJ-45 LAN Port

The Gigabit Ethernet LAN port provides Internet connection at up to 1 Gbps data rate. The following describes the states of the LAN port LEDs.

c HDMI Port

The HDMI (High-Definition Multimedia Interface) provides an all-digital audio/video interface to transmit the uncompressed audio/video signals and is HDCP compliant. Connect the HDMI audio/video device to this port. The HDMI Technology can support a maximum resolution of 1920x1080p but the actual resolutions supported depend on the monitor being used.

- When After installing the HDMI device, make sure the default device for sound playback is the HDMI device. (The item name may differ by operating system. Refer the figures below for details.), and enter BIOS Setup, then set Onboard VGA output connect to D-SUB/ HDMI under Advanced BIOS Features..
- Please note the HDMI audio output only supports AC3, DTS and 2-channel-LPCM formats. (AC3 and DTS require the use of an external decoder for decoding.)

d USB 2.0 Port

The USB port supports the USB 2.0 specification. Use this port for USB devices such as a USB keyboard/mouse, USB printer, USB flash drive and etc.

e USB 3.0 Port

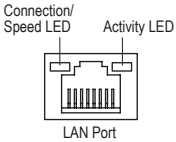
The USB port supports the USB 3.0 specification. Use this port for USB devices such as a USB keyboard/mouse, USB printer, USB flash drive and etc.

f Optical S/PDIF Out Connector

This connector provides digital audio out to an external audio system that supports digital optical audio. Before using this feature, ensure that your audio system provides an optical digital audio in connector.

g Line In Jack (Blue)

The default line in jack. Use this audio jack for line in devices such as an optical drive, walkman, etc.



Connection/Speed LED:

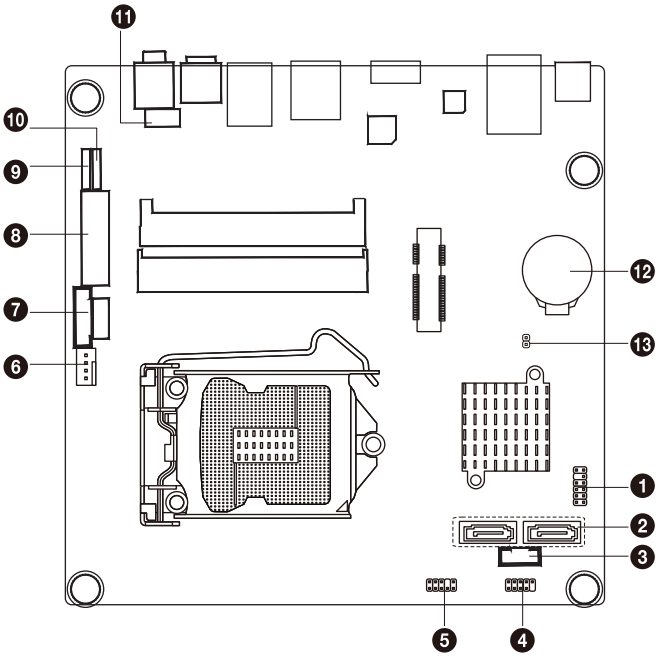
State	Description
Orange	1 Gbps data rate
Green	100 Mbps data rate
Off	10 Mbps data rate

Activity LED:

State	Description
Blinking	Data transmission or receiving is occurring
Off	No data transmission or receiving is occurring

- When removing the cable connected to a back panel connector, first remove the cable from your device and then remove it from the motherboard.
- When removing the cable, pull it straight out from the connector. Do not rock it side to side to prevent an electrical short inside the cable connector.

1-6 Internal Connectors



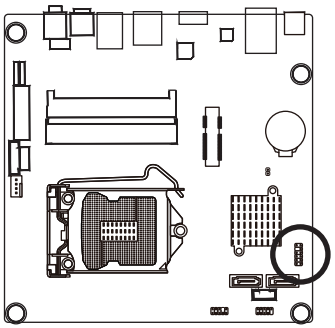
1)	F_PANEL	8)	LVDS
2)	SATA1/2	9)	DMIC_CON
3)	HDD_PWR	10)	WEB_CON
4)	F_USB1	11)	SPEK
5)	F_AUDIO	12)	BAT
6)	CPU_FAN	13)	CLR_CMOSHW
7)	FPD		

Read the following guidelines before connecting external devices:

- First make sure your devices are compliant with the connectors you wish to connect.
- Before installing the devices, be sure to turn off the devices and your computer. Unplug the power cord from the power outlet to prevent damage to the devices.
- After installing the device and before turning on the computer, make sure the device cable has been securely attached to the connector on the motherboard.

1) F_PANEL (Front Panel Header)

Connect the power switch, reset switch, speaker, chassis intrusion switch/sensor and system status indicator on the chassis to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables.

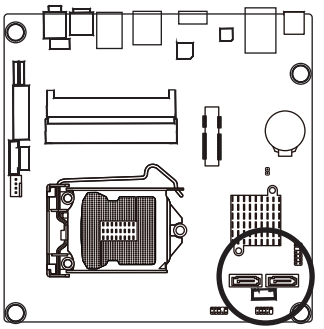


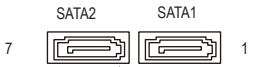
Pin No.	Signal Name	Definition
1	HDD LED +	Hard Disk LED Signal anode (+)
2	Power LED+	Power LED Signal anode (+)
3	HDD LED -	Hard Disk LED Signal cathode(-)
4	Power LED-	Power LED Signal cathode(-)
5	GND	Ground
6	Power Switch+	Power Button anode (+)
7	RST	Reset Button
8	GND	Ground
9	LED_WLAN	Wireless LAN active LED Signal anode (+)
10	NA	No Connect
11	PCH_GPIO1	Brigtness up Button Signal
12	PCH_GPIO6	Brigtness down Button Signal

The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

2) SATA1/2 (SATA 3Gb/s Connectors)

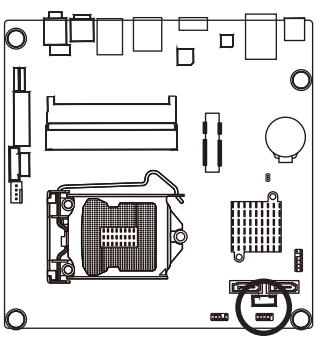
The SATA connectors conform to SATA 3Gb/s standard and are compatible with SATA 1.5Gb/s standard. Each SATA connector supports a single SATA device.





Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

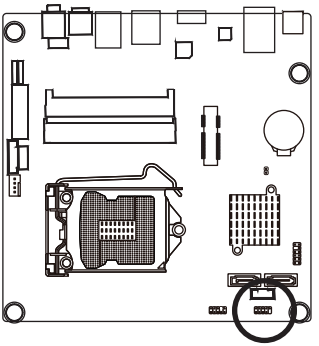
3) HDD_PWR (HDD Power Connector)



Pin No.	Definition
1	+12V
2	GND
3	VCC
4	VCC
5	GND

4) F_USB1 (USB Headers)

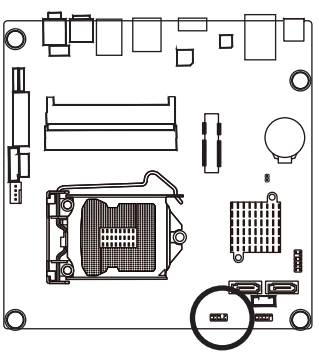
The headers conform to USB 2.0/1.1 specification. Each USB header can provide two USB ports via an optional USB bracket. For purchasing the optional USB bracket, please contact the local dealer.

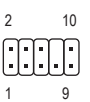


Pin No.	Definition
1	USB Power 5V
2	USB Power 5V
3	USB D-
4	USB D-
5	USB D+
6	USB D+
7	GND
8	GND
9	No Pin
10	GND

5) F_AUDIO (Front Panel Audio Header)

The front panel audio header supports Intel High Definition audio (HD) and AC'97 audio. You may connect your chassis front panel audio module to this header. Make sure the wire assignments of the module connector match the pin assignments of the motherboard header. Incorrect connection between the module connector and the motherboard header will make the device unable to work or even damage it.





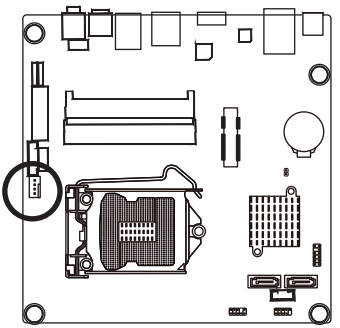
For AC'97 Front Panel Audio:

Pin No.	Definition
1	MIC in L
2	GND
3	MIC in R
4	PCH_GPIO68
5	Line out R
6	MIC Jack detect
7	GND
8	No Pin
9	Line out L
10	Line out jack detect

- The front panel audio header supports HD audio by default.
- Audio signals will be present on both of the front and back panel audio connections simultaneously.
- Some chassis provide a front panel audio module that has separated connectors on each wire instead of a single plug. For information about connecting the front panel audio module that has different wire assignments, please contact the chassis manufacturer.

6) CPU_FAN (CPU Fan Headers)

The motherboard has a 4-pin CPU fan header (CPU_FAN) headers. Most fan headers possess a foolproof insertion design. When connecting a fan cable, be sure to connect it in the correct orientation (the black connector wire is the ground wire). The motherboard supports CPU fan speed control, which requires the use of a CPU fan with fan speed control design. For optimum heat dissipation, it is recommended that a system fan be installed inside the chassis.

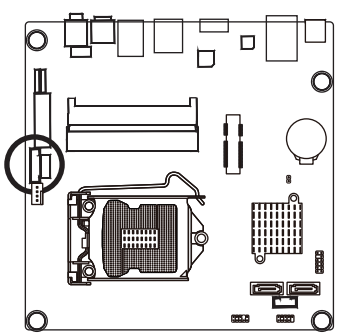


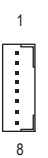
Pin No.	Definition
1	GND
2	+12V
3	Sense
4	Speed Control

- Be sure to connect fan cables to the fan headers to prevent your CPU and system from overheating. Overheating may result in damage to the CPU or the system may hang.
- These fan headers are not configuration jumper blocks. Do not place a jumper cap on the headers.

7) FPD (Flat Panel Display Headers)

Flat Panel Display (FPD)is a high-speed interface connecting the output of a video controller in a laptop computer, computer monitor or LCD television set to the display panel. Most laptops, LCD computer monitors and LCD TVs use this interface internally.
The headers conform to FPD specification.

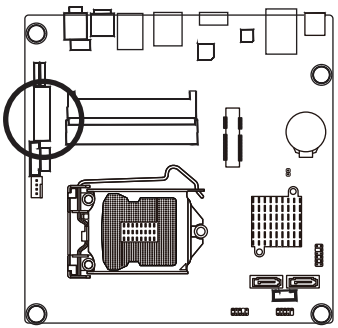


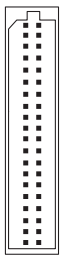


Pin No.	Definition
1	Backlight Enable
2	Backlight control
3	FPD_19V
4	FPD_19V
5	GND
6	GND
7	Brighrness Up
8	Brighrness Down

8) LVDS (LVDS Headers)

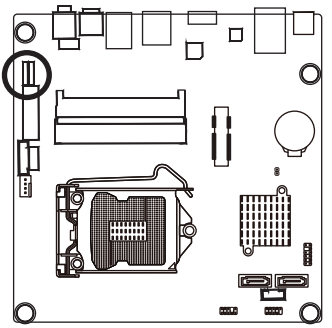
LVDS stands for Low-voltage differential signaling, which uses high-speed analog circuit techniques to provide multigigabit data transfers on copper interconnects and is a generic interface standard for high-speed data transmission.





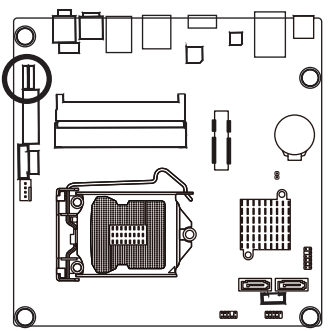
Pin No.	Definition	Pin No.	Definition
1	+RXO3	21	NC
2	-RXO3	22	VCC3
3	+RXO2	23	GND
4	-RXO2	24	GND
5	+RXO1	25	GND
6	-RXO1	26	+RXECLKO
7	+RXO0	27	-RXECLKO
8	-RXO0	28	GND
9	+RXE3	29	GND
10	-RXE3	30	GND
11	+RXE2	31	SCL
12	-RXE2	32	BKLTEN
13	+RXE1	33	BKLTCTL
14	-RXE1	34	+RXECLKE
15	+RXE0	35	-RXECLKE
16	-RXE0	36	FPD_19V
17	GND	37	FPD_19V
18	LCDVCC	38	FPD_19V
19	LCDVCC	39	NC
20	LCDVCC	40	SDA

9) DMIC_CON (DMIC Headers)



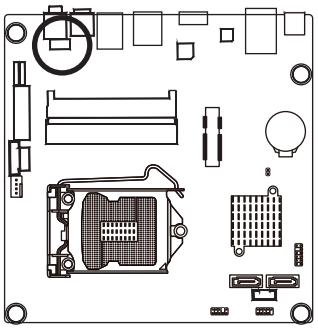
Pin No.	Definition
1	Power
2	DMICDATA
3	GND
4	DMICCLK

10) WEB_CON (WebCAM Headers)



Pin No.	Definition
1	Power
2	USB D-
3	USB D+
4	GND

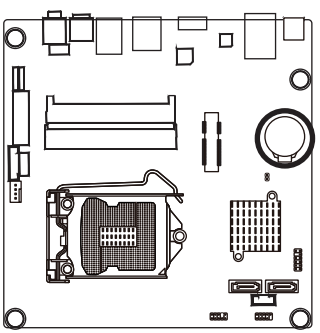
11) SPEK (Speaker Headers)

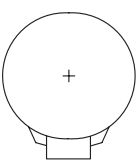


Pin No.	Definition
1	Speaker OUT L-
2	Speaker OUT L+
3	Speaker OUT R+
4	Speaker OUT R-

12) BAT (Battery)

The battery provides power to keep the values (such as BIOS configurations, date, and time information) in the CMOS when the computer is turned off. Replace the battery when the battery voltage drops to a low level, or the CMOS values may not be accurate or may be lost.





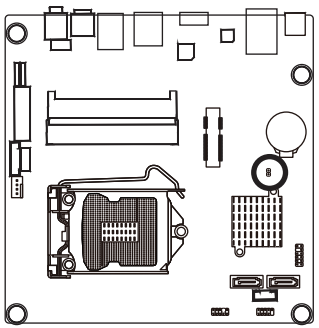
You may clear the CMOS values by removing the battery:

1. Turn off your computer and unplug the power cord.
2. Gently remove the battery from the battery holder and wait for one minute. (Or use a metal object like a screwdriver to touch the positive and negative terminals of the battery holder, making them short for 5 seconds.)
3. Replace the battery.
4. Plug in the power cord and restart your computer.

- Always turn off your computer and unplug the power cord before replacing the battery.
- Replace the battery with an equivalent one. Danger of explosion if the battery is replaced with an incorrect model.
- Contact the place of purchase or local dealer if you are not able to replace the battery by yourself or uncertain about the battery model.
- When installing the battery, note the orientation of the positive side (+) and the negative side (-) of the battery (the positive side should face up).
- Used batteries must be handled in accordance with local environmental regulations.

13) CLR_CMOSHW (Clearing CMOS Jumper)

Use this jumper to clear the CMOS values (e.g. date information and BIOS configurations) and reset the CMOS values to factory defaults. To clear the CMOS values, place a jumper cap on the two pins to temporarily short the two pins or use a metal object like a screwdriver to touch the two pins for a few seconds.



Open: Normal operation (Default setting)

Close: Clear CMOS data

- Always turn off your computer and unplug the power cord from the power outlet before clearing the CMOS values.
- After clearing the CMOS values and before turning on your computer, be sure to remove the jumper cap from the jumper. Failure to do so may cause damage to the motherboard.
- After system restart, go to BIOS Setup to load factory defaults (select **Load Optimized Defaults**) or manually configure the BIOS settings (refer to Chapter 2, "BIOS Setup," for BIOS configurations).

Chapter 2 BIOS Setup

BIOS (Basic Input and Output System) records hardware parameters of the system in the CMOS on the motherboard. Its major functions include conducting the Power-On Self-Test (POST) during system startup, saving system parameters and loading operating system, etc. BIOS includes a BIOS Setup program that allows the user to modify basic system configuration settings or to activate certain system features. When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS to keep the configuration values in the CMOS.

To access the BIOS Setup program, press the <DEL> key during the POST when the power is turned on. To see more advanced BIOS Setup menu options, you can press <Ctrl> + <F1> in the main menu of the BIOS Setup program.

- BIOS flashing is potentially risky, if you do not encounter problems of using the current BIOS version, it is recommended that you don't flash the BIOS. To flash the BIOS, do it with caution. Inadequate BIOS flashing may result in system malfunction.
- It is recommended that you not alter the default settings (unless you need to) to prevent system instability or other unexpected results. Inadequately altering the settings may result in system's failure to boot. If this occurs, try to clear the CMOS values and reset the board to default values. (Refer to the "Load Optimized Defaults" section in this chapter or introductions of the battery/ clearing CMOS jumper in Chapter 1 for how to clear the CMOS values.)

BIOS Setup Program Function Keys

<↑><↓><←><→>	Move the selection bar to select an item
<Enter>	Execute command or enter the submenu
<Esc>	Main Menu: Exit the BIOS Setup program Submenus: Exit current submenu
<Page Up>	Increase the numeric value or make changes
<Page Down>	Decrease the numeric value or make changes
<F1>	Show descriptions of the function keys
<F2>	Move cursor to the Item Help block on the right (submenus only)
<F5>	Restore the previous BIOS settings for the current submenus
<F6>	Load the Fail-Safe BIOS default settings for the current submenus
<F7>	Load the Optimized BIOS default settings for the current submenus
<F8>	Access the Q-Flash utility
<F9>	Display system information
<F10>	Save all the changes and exit the BIOS Setup program
<F11>	Save CMOS to BIOS
<F12>	Load CMOS from BIOS

The Functions of the <F11> and <F12> keys (For the Main Menu Only)

▶ F11: Save CMOS to BIOS

This function allows you to save the current BIOS settings to a profile. You can create up to 8 profiles (Profile 1-8) and name each profile. First enter the profile name (to erase the default profile name, use the SPACE key) and then press <Enter> to complete.

▶ F12: Load CMOS from BIOS

If your system becomes unstable and you have loaded the BIOS default settings, you can use this function to load the BIOS settings from a profile created before, without the hassles of reconfiguring the BIOS settings. First select the profile you wish to load, then press <Enter> to complete.

Advanced

This setup page includes all the items of AMI BIOS special enhanced features.
(ex: Auto detect fan and temperature status, automatically configure hard disk parameters.)

Chipset

Northbridge and Southbridge additional features configuration.

Boot

This setup page provides items for configuration of boot sequence.

Security

Change, set, or disable supervisor and user password. Configuration supervisor password allows you to restrict access to the system and BIOS Setup.

A supervisor password allows you to make changes in BIOS Setup.

A user password only allows you to view the BIOS settings but not to make changes.

Save & Exit

Save all the changes made in the BIOS Setup program to the CMOS and exit BIOS Setup. (Pressing <F10> can also carry out this task.)

Abandon all changes and the previous settings remain in effect. Pressing <Y> to the confirmation message will exit BIOS Setup. (Pressing <Esc> can also carry out this task.)

2-1 The Main Menu

Once you enter the BIOS Setup program, the Main Menu (as shown below) appears on the screen. Use arrow keys to move among the items and press <Enter> to accept or enter other sub-menu.

Main Menu Help

The on-screen description of a highlighted setup option is displayed on the bottom line of the Main Menu.

Submenu Help

While in a submenu, press <F1> to display a help screen (General Help) of function keys available for the menu. Press <Esc> to exit the help screen. Help for each item is in the Item Help block on the right side of the submenu.

- If you do not find the settings you want in the Main Menu or a submenu, press <Ctrl>+<F1> to access more advanced options.
- When the system is not stable as usual, select the **Restore Defaults** item to set your system to its defaults.
- The BIOS Setup menus described in this chapter are for reference only and may differ by BIOS version.

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
BIOS Information
BIOS Vendor American Megatrends
Core Version 4.6.4.0
Compliency UEFI 2.1
Project Version 1I613000.F3 x64
Build Date and Time 06/27/2011 14:28:50
MAC Address 50-E5-49-68-5A-FA
Memory Information
Total Memory 2048 MB (DDR3 1333)
System Language [English]
System Date [Mon 06/27/2011]
System Time [21:24:02]
Access Level Administrator
Choose the system default language
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

☞ **BIOS Version**

Display version number of the BIOS setup utility.

☞ **BIOS Vendor**

Display BIOS vendor information.

☞ **Core Version**

Display version of the processor.

☞ **Compliency**

Display compliency information.

☞ **Project Version**

Display version number of the project.

☞ **BIOS Build Date and Time**

Displays the date and time when the BIOS setup utility was created.

☞ **MAC Address**

Displays the MAC address information.

☞ **Total Memory**

Determines how much total memory is present during the POST.

☞ **System Language**

Select the system default language.

☞ **System Date**

Set the date following the weekday-month-day- year format.

☞ **System Time**

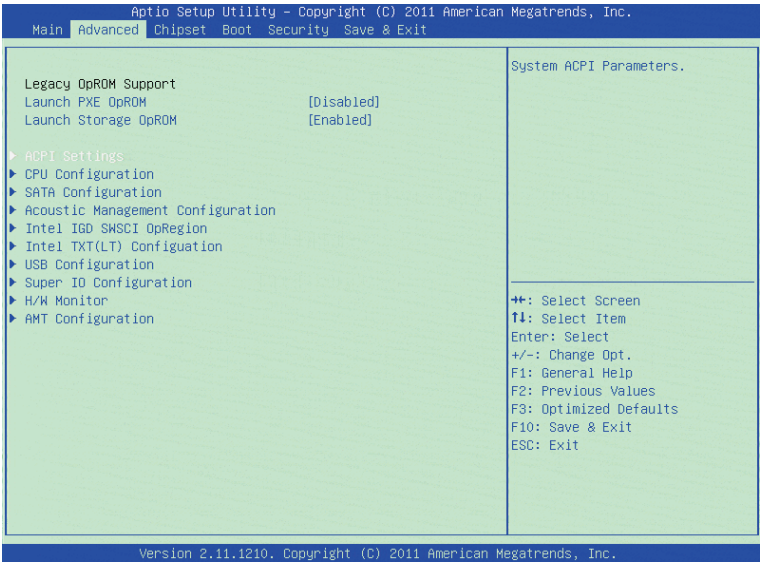
Set the system time following the hour-minute- second format.

☞ **Access Level**

Display current access level information.

2-2 Advanced Menu

The Advanced menu display submenu options for configuring the function of various hardware components. Select a submenu item, then press Enter to access the related submenu screen.



☞ Launch PXE OPROM

Enable/Disable Boot Option for PXE device with option ROM.

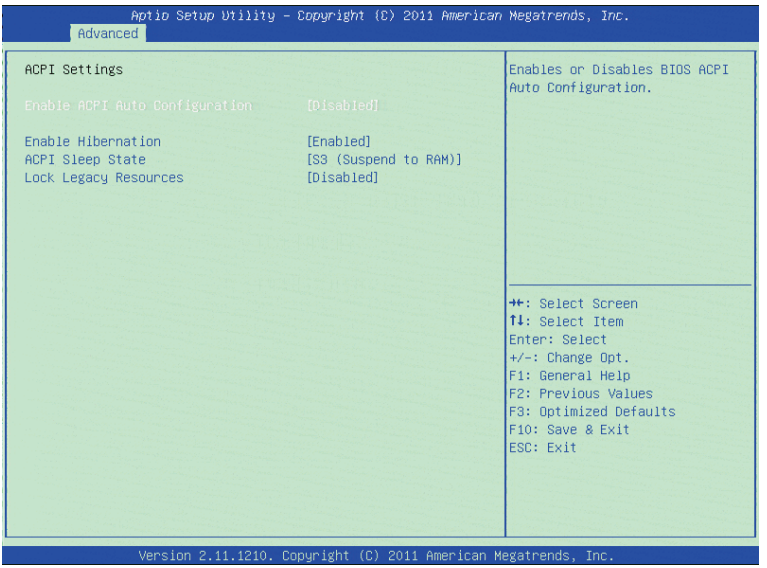
Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ Launch Storage OPROM

Enable/Disable Boot Option for Legacy Mass Storage device with option ROM.

Options available: Enabled/Disabled. Default setting is **Enabled**.

2-2-1 ACPI Settings


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Advanced
ACPI Settings
Enable ACPI Auto Configuration [Disabled]
Enable Hibernation [Enabled]
ACPI Sleep State [S3 (Suspend to RAM)]
Lock Legacy Resources [Disabled]
Enables or Disables BIOS ACPI Auto Configuration.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

☞ Enable ACPI Auto Configuration

Enable/Disable BIOS ACPI Auto Configuration.

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ Enable Hibernation

Enable/Disable system ability to hibernate (OS/S4 Sleep State).

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ ACPI Sleep State

Select the highest ACPI sleep state the system will enter, when the suspend button is pressed.

Suspend Disabled/S1 (CPU Stop Clock)/S3 (Suspend to RAM).

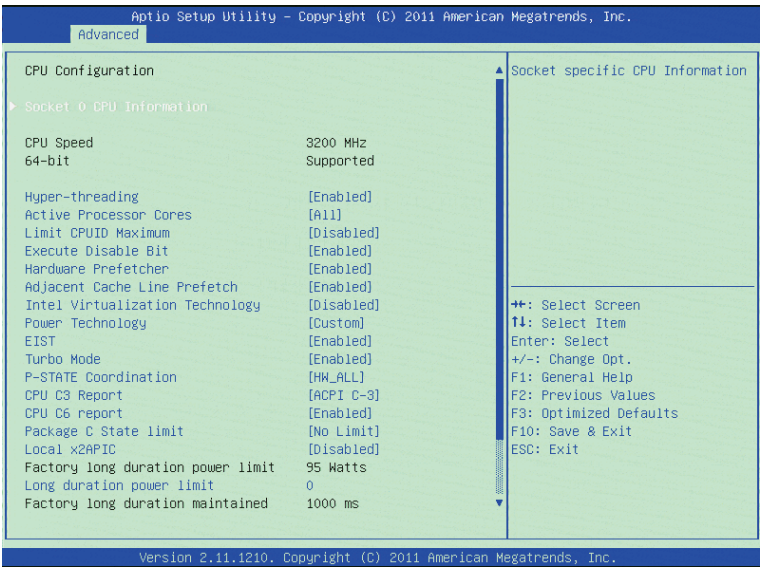
Default setting is **S3 (Suspend to RAM)**.

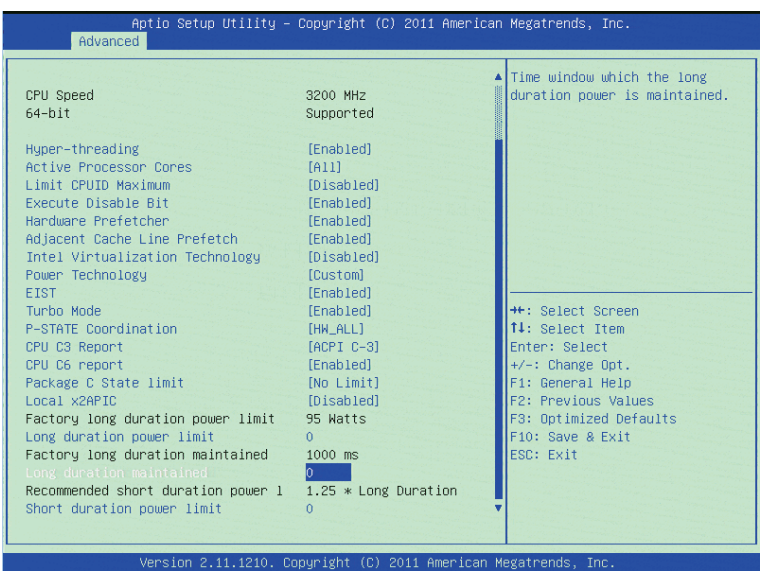
☞ Lock Legacy Resources

Enable/Disable Lock Legacy Resources.

Options available: Enabled/Disabled. Default setting is **Disabled**.

2-2-2 CPU Configuration




Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Advanced
CPU Speed 3200 MHz
64-bit Supported
Hyper-threading [Enabled]
Active Processor Cores [All]
Limit CPUID Maximum [Disabled]
Execute Disable Bit [Enabled]
Hardware Prefetcher [Enabled]
Adjacent Cache Line Prefetch [Enabled]
Intel Virtualization Technology [Disabled]
Power Technology [Custom]
EIST [Enabled]
Turbo Mode [Enabled]
P-STATE Coordination [HW_ALL]
CPU C3 Report [ACPI C-3]
CPU C6 report [Enabled]
Package C State limit [No Limit]
Local x2APIC [Disabled]
Factory long duration power limit 95 Watts
Long duration power limit 0
Factory long duration maintained 1000 ms
Long duration maintained 0
Recommended short duration power l 1.25 * Long Duration
Short duration power limit 0
Time window which the long duration power is maintained.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

☞ CPU Information

This category includes all the information of CPU Speed and supported 64-Bit information.

☞ Hyper Threading

The Intel Hyper Threading Technology allows a single processor to execute two or more separate threads concurrently. When hyper-threading is enabled, multi-threaded software applications can execute their threads, thereby improving performance.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Active Processor Cores (Note)

Allows you to determine whether to enable all CPU cores.

Options available: All/1/2/3. Default setting is **All**.

☞ Limit CPUID Maximum

Allows you to determine whether to enable CLimit CPUID Maximum function

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ Execute Disable Bit

When this item enabled, the processor prevents the execution of code in data-only memory pages. This provides some protection against buffer overflow attacks.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Hardware Prefetcher

Select whether to enable the speculative prefetch unit of the processor.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Adjacent Cache Line Prefetch

When enabled, cache lines are fetched in pairs. When disabled, only the required cache line is fetched.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Intel Virtualization Technology

Select whether to enable the Intel Virtualization Technology function. VT allows a single platform to run multiple operating systems in independent partitions.

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ Power Technology

Determine the CPU power saving type.

Options available:Disabled/Custom/Energy Efficient. Default setting is **Custom**.

☞ EIST (Enhanced Intel SpeedStep Technology)

Conventional Intel SpeedStep Technology switches both voltage and frequency in tandem between high and low levels in response to processor load.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Turbo Mode

When this feature is enabled, the processor can dynamically overclock one or two of its four processing cores to improve performance with applications that are not multi-threaded or optimized for quad-core processors.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ P-State Coordination

In HW_ALL mode, the processor hardware is responsible for coordinating the P-state among logical processors dependencies. The OS is responsible for keeping the P-state request up to date on all logical processors.

In SW_ALL mode, the OS Power Manager is responsible for coordinating the P-state among logical

processors with dependencies and must initiate the transition on all of those Logical Processors.
In SW_ANY mode, the OS Power Manager is responsible for coordinating the P-state among logical processors with dependencies and may initiate the transition on any of those Logical Processors.
Options available: HW_ALL/SW_ALL/SW_ANY. Default setting is **HW_ALL**.

☞ **CPU C3/C6 Support** (Note)

Allows you to determine whether to let the CPU enter C3/C6 mode in system halt state. When enabled, the CPU core frequency and voltage will be reduced during system halt state to decrease power consumption. The C3/C6 state is a more enhanced power-saving state than C1. **Auto** lets the BIOS automatically configure this setting.
Options available for CPU C3 Report: ACPI C2/ACPI C3/Disabled. Default setting is **ACPI C2**.
Options available for CPU C6 Report: Enabled/Disabled. Default setting is **Enabled**.

☞ **Package C State Limit**

Configure state for the C-State package limit.
Options available: C0/C1/C6/C7/No Limit. Default setting is **No Limit**.

☞ **Local x2APIC**

Enable/Disable Local x2APIC.
Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ **Factory long duration power limit**

Display the information of Factory long duration power limit.

☞ **Long duration power limit**

Press numeric keys to determine desire values.

☞ **Factory long duration maintained**

Display the information of Factory long duration power limit.

☞ **Long duration maintained**

Press numeric keys to determine desire values.

☞ **Recommended short duration power limit**

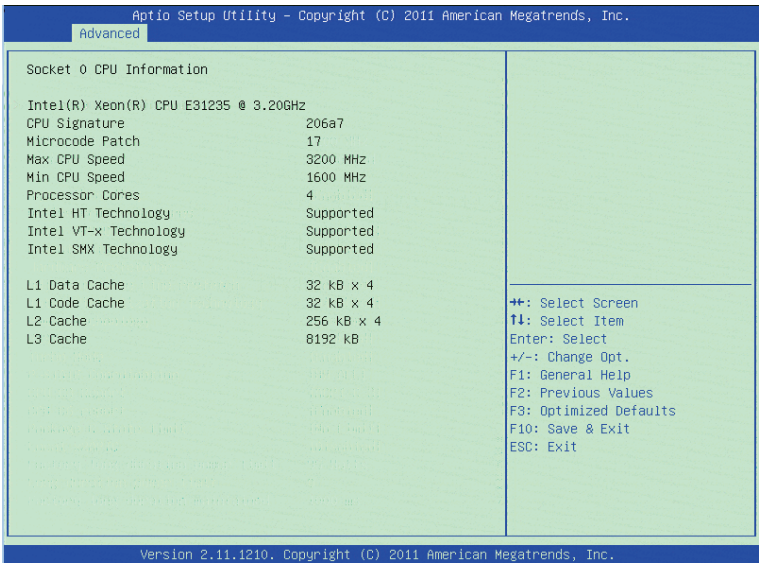
Display the information of Recommended short duration power limit.

☞ **Short duration power limit**

Press numeric keys to determine desire values.

(Note) This item is present only if you install a CPU that supports this feature. For more information about Intel CPUs' unique features, please visit Intel's website.

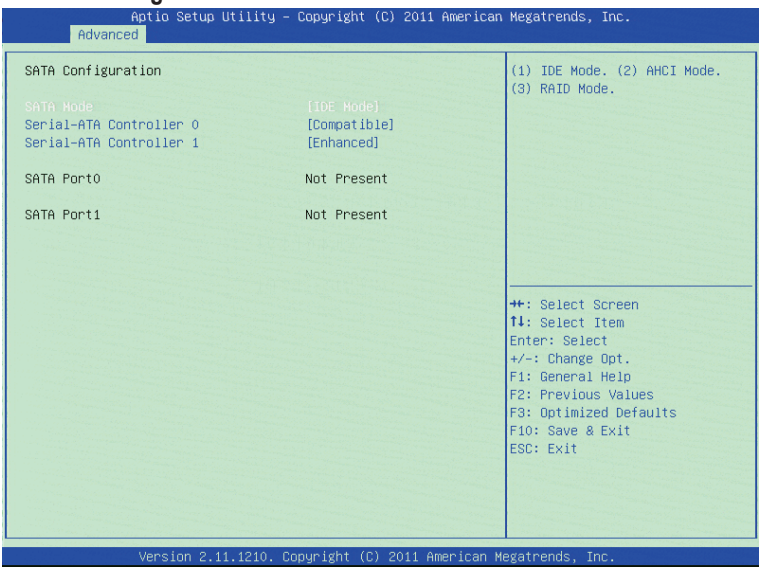
2-2-2-1 Socket 0 CPU Information


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Advanced
Socket 0 CPU Information
Intel(R) Xeon(R) CPU E31235 @ 3.20GHz
CPU Signature 206a7
Microcode Patch 17
Max CPU Speed 3200 MHz
Min CPU Speed 1600 MHz
Processor Cores 4
Intel HT Technology Supported
Intel VT-x Technology Supported
Intel SMX Technology Supported
L1 Data Cache 32 kB x 4
L1 Code Cache 32 kB x 4
L2 Cache 256 kB x 4
L3 Cache 8192 kB
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

☞ **Spcket 0 CPU Information:**

The Socket 0 CPU information submenu is a simple display page for the installed processor ID information. Items on this window are non-configurable.

2-2-3 SATA Configuration



☞ SATA Mode

Select the on chip SATA type.

IDE Mode: When set to IDE, the SATA controller disables its RAID and AHCI functions and runs in the IDE emulation mode. This is not allowed to access RAID setup utility.

RAID Mode: When set to RAID, the SATA controllerenables both its RAID and AHCI functions. You will be allows access the RAID setup utility at boot time.

ACHI Mode: When set to AHCI,the SATA controller enables its AHCI functionality. Then the RAID function is disabled and cannot be access the RAID setup utility at boot time.

Options available: IDE/RAID/ACHI. Default setting is **IDE Mode**.

☞ Serial-ATA 0/1 Controllers

Determine the on chip SATA controller 0/1 mode.

Enhanced: SATA and PATA drives are auto-detected and placed inNative mode.

Compatible: SATA and PATA drives are auto-detected and placed inLegacy mode.

Default setting for Serial-ATA 0 controller is **Compatible**.

Default setting for Serial-ATA 1 controller is **Enhanced**.

☞ SATA Port 0/1

The category identifies Serial ATA types of hard disk that are installed in the computer.

System will automatically detect HDD type.

Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

Hard drive information should be labeled on the outside device casing. Enter the appropriate option based on this information.

☞ Type

Auto: Set parameters automatically. (Default setting)
CD-ROM: Use for ATAPI CD-ROM drives or double click [Auto] to set all HDD parameters automatically.
ARMD: Use ARMD drive is installed here.

☞ LBA/Large Mode

Configure the device type in the specific IDE channel support LBA Mode.
Option available: Auto/Disabled. Default setting is **Auto**.

☞ Block (Multi-Sector Transfer)

Configure the information of Multi-Sector Transfer Mode.

Auto: The data transfer from and to the device occurs multiple sectors at a time if the device supports it.

Disabled: The data transfer from and to the device occurs one sector at a time.
Option available: Auto/Disabled. Default setting is **Auto**.

☞ PIO Mode

This feature allows you to set the PIO (Programmed Input/Output) mode for the two IDE devices (Master and Slave drives) attached to that particular IDE channel.
Option available: Auto/Disabled. Default setting is **Auto**.

☞ PIO Mode

This feature allows you to set the PIO (Programmed Input/Output) mode for the two IDE devices (Master and Slave drives) attached to that particular IDE channel.
Option available: Auto/Disabled. Default setting is **Auto**.

☞ DMA Mode

Configure the DMA mode of the device in the specific IDE channel.
Option available: Auto/Disabled. Default setting is **Auto**.

☞ S.M.A.R.T Mode

This feature allows you to set the PIO (Programmed Input/Output) mode for the two IDE devices (Master and Slave drives) attached to that particular IDE channel.
Option available: Auto/Disabled. Default setting is **Auto**.

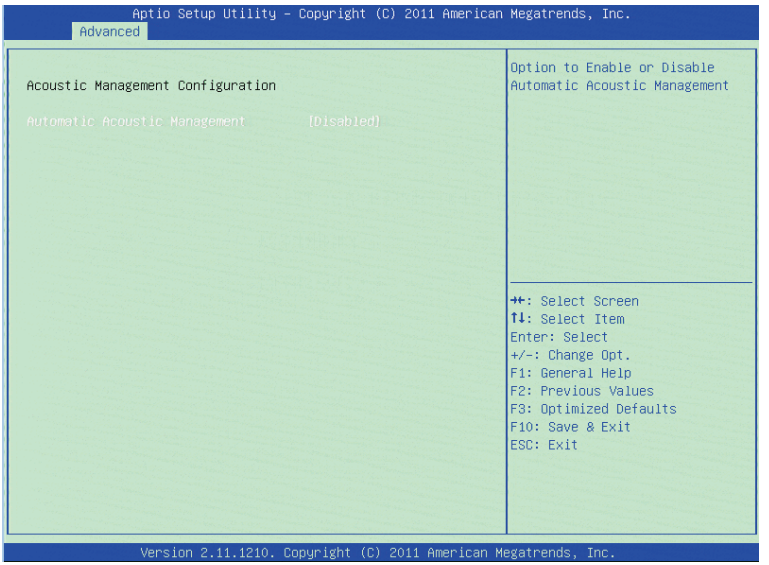
☞ S.M.A.R.T Mode

This option enables/disables support for the hard disk's S.M.A.R.T. capability. The S.M.A.R.T. (Self Monitoring Analysis And Reporting) technology is supported by all current hard disks and it allows the early prediction and warning of impending hard disk disasters.
Option available: Auto/Disabled. Default setting is **Auto**.

☞ 32Bit Data Transfer

Configure the 32Bit Data Transfer rate.
Option available: Auto/Disabled. Default setting is **Auto**.

2-2-4 Acoustic Management Configuration

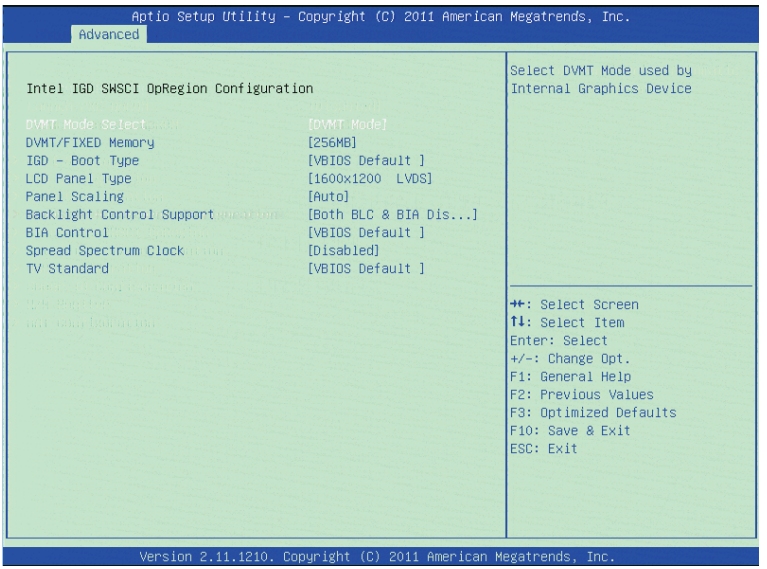

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Advanced
Acoustic Management Configuration
Automatic Acoustic Management [Disabled]
Option to Enable or Disable Automatic Acoustic Management
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

☞ Automatic Acoustic Management

Enable/Disable Automatic Acoustic Management function.

Option available: Enabled/Disabled. Default setting is **Disabled**.

2-2-5 Intel IGD SWSCI OpRegion


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Advanced
Intel IGD SWSCI OpRegion Configuration
DVMT Mode Select [DVMT Mode]
DVMT/FIXED Memory [256MB]
IGD – Boot Type [VBIOS Default]
LCD Panel Type [1600x1200 LVDS]
Panel Scaling [Auto]
Backlight Control Support [Both BLC & BIA Dis...]
BIA Control [VBIOS Default]
Spread Spectrum Clock [Disabled]
TV Standard [VBIOS Default]
Select DVMT Mode used by Internal Graphics Device
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

☞ DVMT Mode Select

Confiigure the DVMT Mode.

Options available: DVMT Mode/Fixed Mode.

Default setting is **DVMT Mode.**

☞ DVMT/Fixed Memory

Select DVMT Pre-Allocated (Fixed) Graphics Memory size used by the Internal graphicsdevice.

Options available: 128MB/256MB/Maximum.

Default setting is **256MB.**

☞ IGD - Boot Type

Select the Video Device that will be activated during POST.

Options available: VBIOS Default/CRT/LFP/CRT+LFP/CRT+LFP - SDVO/EFP/EFP2/EFP3/CRT+EFP

Default setting is **VBIOS Default.**

☞ LCD Panel Type

Selecting by Internal Graphics Device by selecting appropriate setup item.

Options available: 800x600 LVDS/1024x768 LVDS/1280x1024 LVDS/1400x1050 LVDS1/1400x1050 LVDS2/ 1600x1200 LVDS/ 1280x768 LVDS/ 1380x1050 LVDS/1920x1200 LVDS/1280x800 LVDS/1280x600 LVDS/ 2048x1536 LVDS

☞ Panel Scaling

Options available: Auto/Force Scaling/Off.

☞ Backlight Control Support

Options available: Both BLC & BIA Disabled/BLC Enabled.

☞ BIA Conttol

Options available: VBIOS Default/Disabled/Level 1/Level 2/Level 3/Level 4/Level 5.

☞ **Spread Spectrum Clock**

Enable/Disabled Spread Spectrum Clock.

Options available: Enabled/Disabled. Deafult setting is **Disabled**.

☞ **TV Standard**

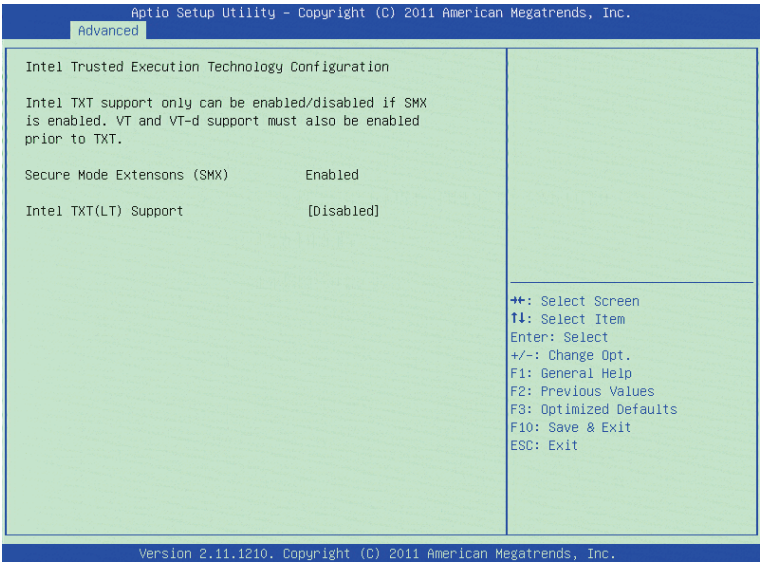
elect the TV standard used by the Internal graphics device.

Options available:

VBIOS Default/NTSC-M/NTSC-J/NTSC-443/PAL-B/PAL-G/PAL-D/PAL-H/PAL-I/PAL-K/PAL-M/PAL-N/PAL-Nc/SECAM-L/SECAM-B/SECAM-D/SECAM-G/SECAM-H/SECAM-K/1080i59/1080i60/

33K 576i @50Hz/31K 576p @50Hz/ 1080i50/1080p50/720p59/720p60/480p60/480p59/480i60/480i59/1080p60/1080p59/1080i60/1080i59

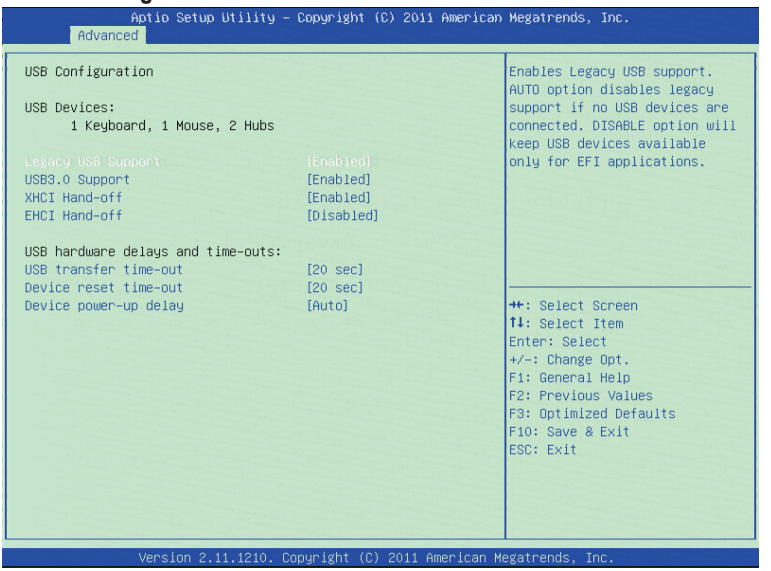
2-2-6 Intel TXT(LT) Configuration


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Advanced
Intel Trusted Execution Technology Configuration
Intel TXT support only can be enabled/disabled if SMX is enabled. VT and VT-d support must also be enabled prior to TXT.
Secure Mode Extensons (SMX) Enabled
Intel TXT(LT) Support [Disabled]
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

☞ **Intel TXT(LT) Configuration**

The Intel Trusted Execution Technology (TXT) submenu is a display page for the Intel TXT information. Items on this window are non-configurable.

2-2-7 USB Configuration


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Advanced
USB Configuration
USB Devices:
1 Keyboard, 1 Mouse, 2 Hubs
Legacy USB Support [Enabled]
USB3.0 Support [Enabled]
XHCI Hand-off [Enabled]
EHCI Hand-off [Disabled]
USB hardware delays and time-outs:
USB transfer time-out [20 sec]
Device reset time-out [20 sec]
Device power-up delay [Auto]
Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

☞ Detected USB Devices

Displays the information of installed USB devices in the system.

☞ Legacy USB Support

Enables or disables support for legacy USB devices.

Options available: Auto/Enabled/Disabled. Default setting is **Enabled**.

☞ USB 3.0 Suupport

When enabled, the USB 3.0 controller will function normally.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ XHCI Hand-off

Enable/Disable XHCI Hand-off function.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ EHCI Hand-off

Enable/Disable EHCI Hand-off function.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ USB transfer time-out

Define USB transfer start unit command timeout.

Options available: 10 sec/20sec/30sec/40sec.

☞ Device reset time-out

Define USB device reset start unit command timeout.

Options available: 10 sec/20sec/30sec/40sec.

☞ Device power-up delay

Define USB device powering up start unit command timeout. When this item is set to Manual, you can press numeric keys to configure desired values.

Options available: Auto/Manual.

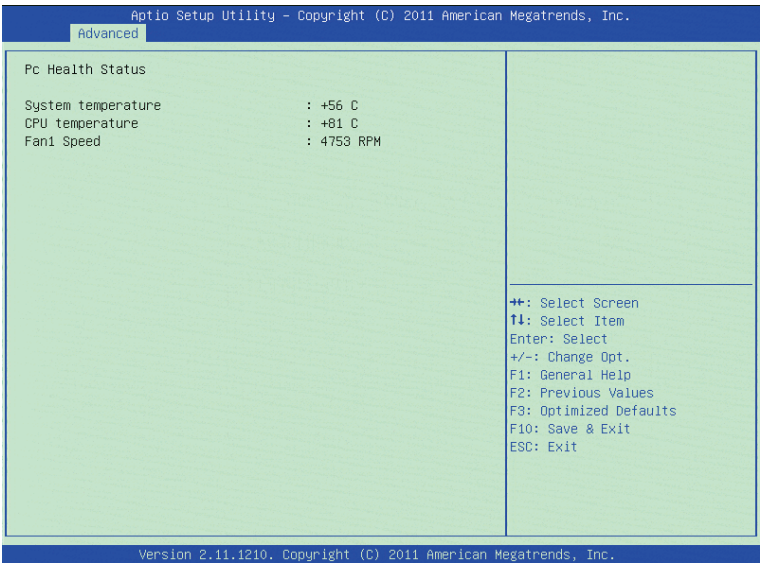
2-2-8 Super IO Configuration

☞ **Super IO Configuration**

The Super IO Configuration submenu is a display page for the Super IO chipset information. Items on this window are non-configurable.

2-2-9 H/W Monitor

Press Enter to view the Hardware Monitor screen which displays a real-time record of the CPU/system temperature, and fan speed, Items on this window are non-configurable.



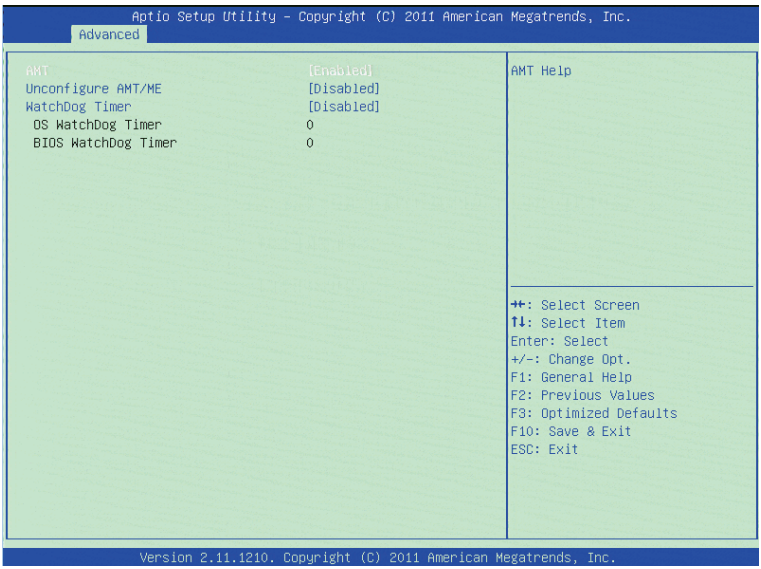
☞ **System Temperature/CPU Temperature**

Displays current CPU and System temperature.

☞ **FAN1 Speed (RPM)**

Displays current CPU fan speed.

2-2-10 AMT Configuration



☞ Unconfigure AMT/ME

Enables/DisableUnconfigure AMT/ME function.

Options available: Auto/Enabled/Disabled. Default setting is **Enabled**.

☞ Watchdog Timer

Enable/Disable Watchdog timer function.

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ OS Watchdog Timer

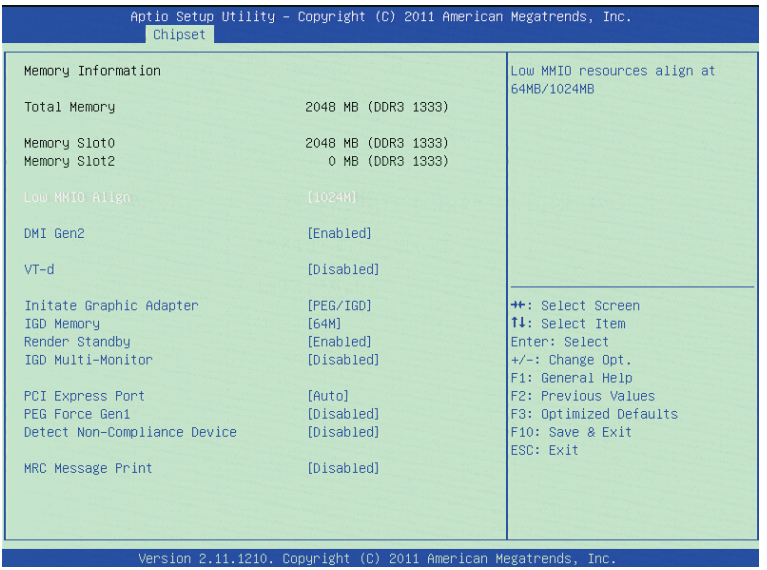
Press numeric key to adjust desire values.

☞ BIOS Watchdog Timer

Press numeric key to adjust desire values.

2-3 Chipset Menu

2-3-1 North Bridge



☞ **Total Memory**

Total size of system memory detected during POST.

☞ **DIMM Group #1/2/ Status**

The size of memory installed on each of the DDR3 slots.

☞ **Low MMIO Align**

Determone Low MMIO resources align at 64MB or 1024MB.
Option available: 64MB/1024MB. Default setting is 1024MB.

☞ **DMI Gen2**

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **VT-d**

Enable/Disable Intel VD-d Technology function.
Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ **Iniate Graphic Adapter**

Select which graphic controller to use as primary boot device.
Options available: IGD/PEG/IGD. Default setting is **PEG/IGD**.

☞ **IGD Memory**

Determone the IGD shared memory size.
Options available: 32M/64M/96M/128M/160M/192M/224M/256M/288M/320M/352M/384M/416M/448M/480M/512M/Disabled.

☞ **Render Standby**

Enable/Disable Render Standby by internal graphics device.
Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ IGD Multi-Monitor

Enable/Disable IGD Multi-Monitor by internal graphics device.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ PCI Express Port

Configure PCI Express Port.

Options available: Auto/Enabled/Disabled. Default setting is **Auto**.

☞ PEG Force Gen1

Enable/Disable PEG Force Gen1.

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ Detect Non-Compliance Device

Enable/Disable Detect Non-Compliance Device.

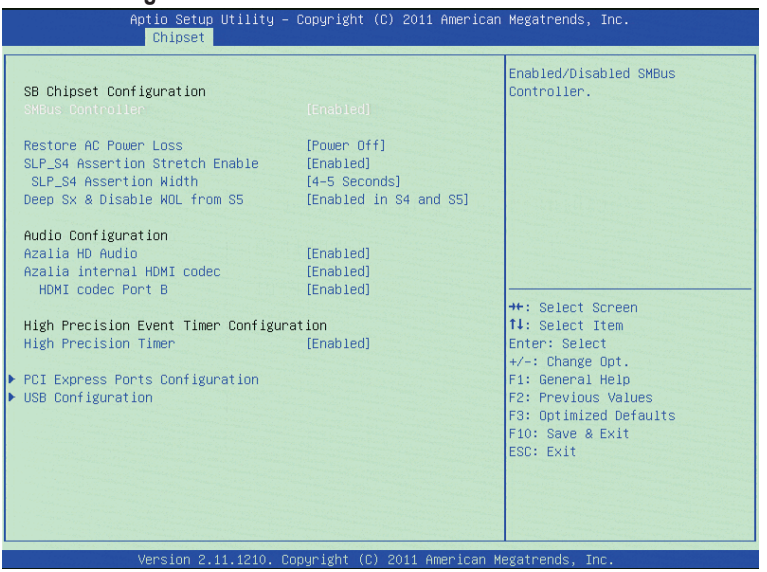
Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ MRC Message Print

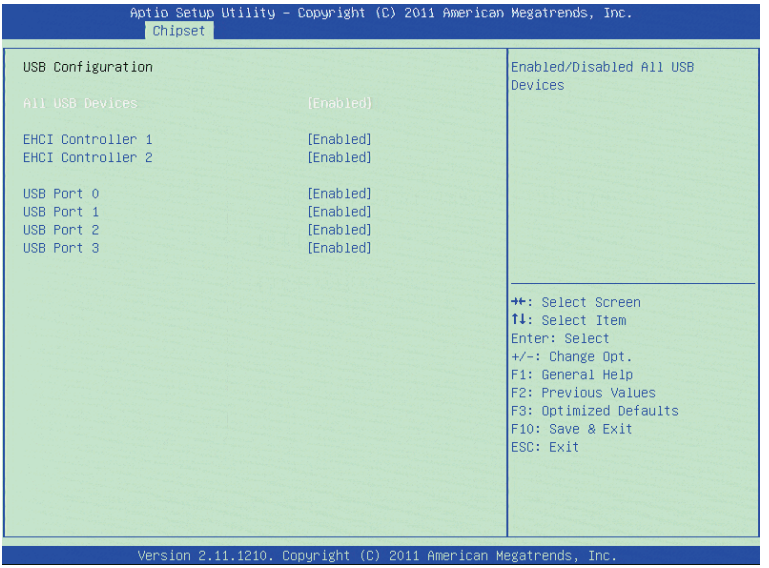
Enable/Disable Print Message Initialize message.

Options available: Enabled/Disabled. Default setting is **Disabled**.

2-3-2 South Bridge


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Chipset
SB Chipset Configuration
SMBus Controller [Enabled]
Restore AC Power Loss [Power Off]
SLP_S4 Assertion Stretch Enable [Enabled]
SLP_S4 Assertion Width [4-5 Seconds]
Deep Sx & Disable WOL from S5 [Enabled in S4 and S5]
Audio Configuration
Azalia HD Audio [Enabled]
Azalia internal HDMI codec [Enabled]
HDMI codec Port B [Enabled]
High Precision Event Timer Configuration
High Precision Timer [Enabled]
PCI Express Ports Configuration
USB Configuration
Enabled/Disabled SMBus Controller.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Chipset
PCI Express Ports Configuration
PCI Express Port 1 [Auto]
PCI Express Port 2 [Auto]
PCI Express Port 3 [Auto]
PCI Express Port 4 [Auto]
PCI Express Port 5 [Auto]
PCI Express Port 6 [Auto]
PCI Express Port 7 [Auto]
PCI Express Port 8 [Auto]
PCIe Sub Decode [Disabled]
Enabled/Disabled the PCI Express Ports in the Chipset.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.



☞ SMBus Controller

Enable/Disable onboard SMBus controller.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Restore AC Power Loss

This option provides user to set the mode of operation if an AC / power loss occurs.

Power On: System power state when AC cord is re-plugged.

Power Off: Do not power on system when AC power is back.

Last State: Set system to the last sate when AC power is removed.

Options available: Power On/Power Off/Last State. Default setting is **Power Off**.

☞ SLP_S4 Assertion Stretch Enable

Enable/Disable SLP_S4 Assertion Stretch.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ SLP_S4 Assertion Width

Configure SLP_S4 Assertion Width.

Options available: [1-2 Seconds]/[2-3 Seconds]/[3-4 Seconds]/[4-5 Seconds].

Default setting is **[4-5 Seconds]**.

☞ Deep Sx & Disable WOL from S5

Deep Sx configuration. If this item set to enabled, the WOL from S5 will be disabled.

Note: Mobile platforms support Deep S4/S5 in DC only and Desktop platforms support Deep S4/S5 in AC only.

Options available: Disabled/Enabled in S5/Enabled in S4 and S5.

Default setting is **Enabled in S4 and S5**.

☞ **Azalia HD Audio**

Enable/Dsiable onboard audio device.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **Azalia internal HDMI codec**

Enable/Dsiable onboard Azalia internal HDMI codec.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **HDMI codec Port B**

Enable/Dsiable onboard HDMI codec Port B.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **High Precision Event Timer**

Enable/Dsiable High Precision Event Timer.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **PCI Express Ports Configuration**

☞ **PCI Express Port Group #1/2/3/4/5/6/7/8 Configuration**

Enable/Dsiable specific PCI Express Port in the chipset.

Options available: Auto/Enabled/Disabled. Default setting is **Enabled**.

☞ **PCIe Sub Decode**

Enable/Dsiable PCIe Sub Decode.

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ **USB Configuration**

☞ **All USB Devices**

Enable/Dsiable all onboard USB devices.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **EHCI Controller 1**

Enable/Dsiable onboard EHCI controller 1.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **EHCI Controller 2**

Enable/Dsiable onboard EHCI controller 2.

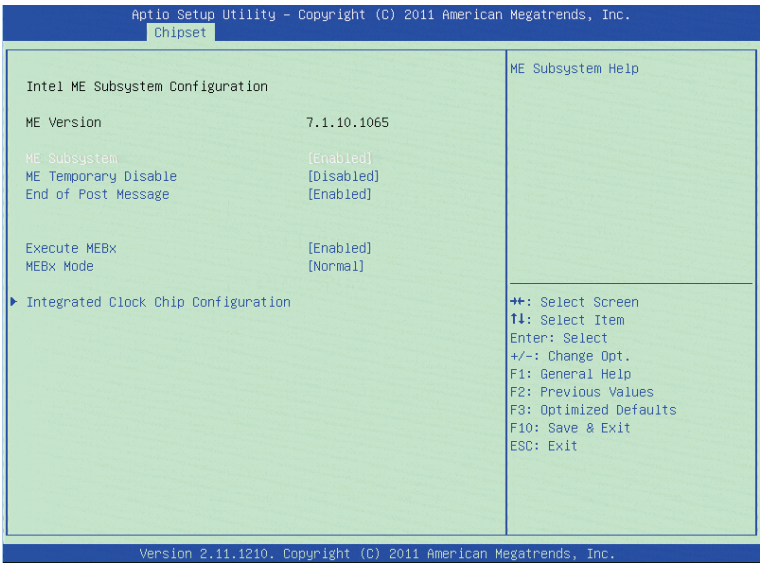
Options available: Enabled/Disabled. Default setting is **Enabled**.

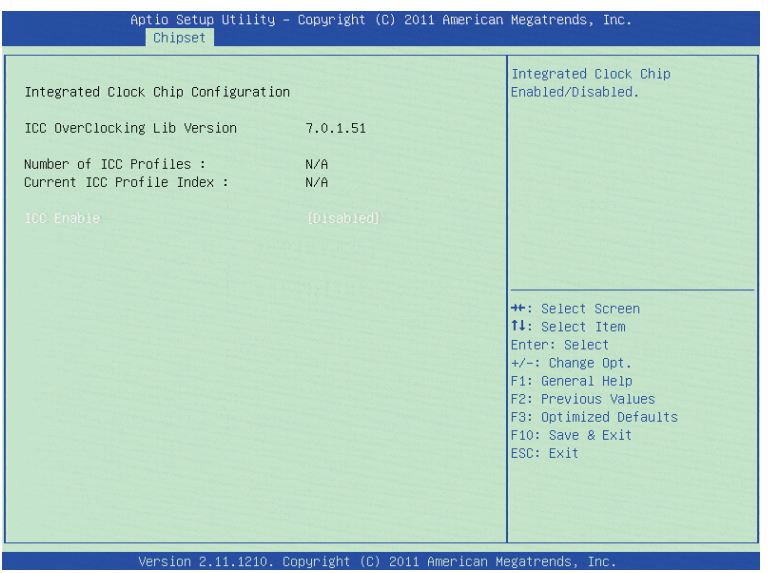
☞ **USB Port Group #0/1/2/3**

Enable/Dsiable specific USB Port in the chipset.

Options available: Enabled/Disabled. Default setting is **Enabled**.

2-3-3 ME Subsystem




Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Chipset
Integrated Clock Chip Configuration
ICC OverClocking Lib Version 7.0.1.51
Number of ICC Profiles : N/A
Current ICC Profile Index : N/A
ICC Enable [Disabled]
Integrated Clock Chip Enabled/Disabled.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

☞ **ME Version**

Display the ME version information.

☞ **ME Subsystem**

Enable/Dsiable ME Subsystem function.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **ME Temporary Disable**

Enable/Dsiable ME Temporary Disable function.

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ **End of Post Message**

Enable/Dsiable End of Post Message function.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **Execute MEBx**

Enable/Dsiable Execute MEBx function.

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ **MEBx Mode**

Configure MEBx Mode.

Options available: Normal/Hidden Ctrl + p/ Enter MEBx Setup. Default setting is **Normal**.

☞ **Integrated Clock Chip Configuration**

☞ **ICC OverClocking Lib Version**

Display ICC OverClocking Lib Version information.

☞ **Number of ICC Profiles**

Display the Number of ICC Profiles information.

☞ **Current ICC Profile Index**

Display Current ICC Profile Index information.

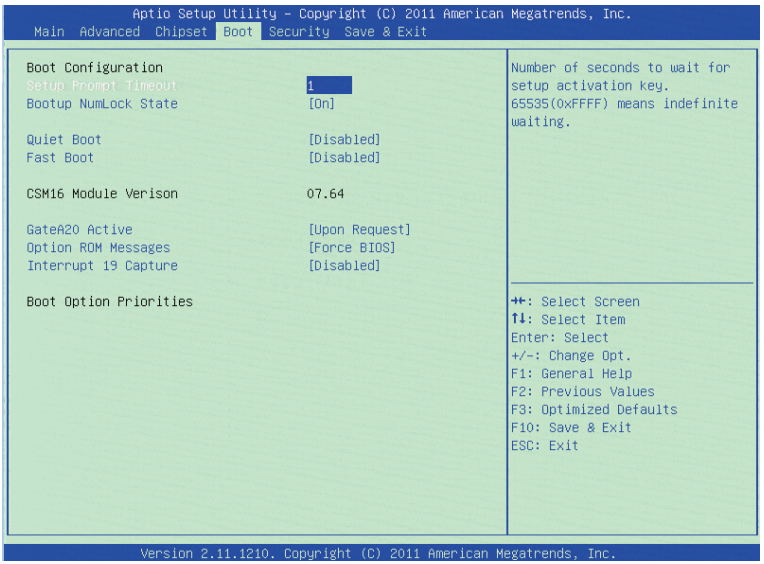
☞ **ICC Enabled**

Enable/Disable Integrated Clock Chip.

Options available: Enabled/Disabled. Default setting is **Disabled**.

2-4 Boot Menu

The Boot menu allows you to set the drive priority during system boot-up. BIOS setup will display an error message if the drive(s) specified is not bootable.



☞ Setup Prompt Timeout

Define Setup Prompt start unit command timeout.

Press numeric keys to adjust desired values.

☞ Bootup NumLock State

Allows you to select power-on state for NumLock function.

Options available: On/Off. Default setting is **On**.

☞ Quick Boot

Allow BIOS to skip certain tests while booting.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Fast Boot

Enable/Disable boot with initialization of a minimal set of devices required to launchactive boot option.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ CSM16 Module Version

Displays the CSM16 Module Version information.

☞ GateA20 Active

Upon Request: GA20 can be disabled using BIOS services.

Always: do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.

Options available: Upon Request/Always. Default setting is **Upon Request**.

☞ **Option ROM Messages**

Set display mode for Option ROM.

Options available: Force BIOS/Keep Current . Default setting is **Force BIOS**.

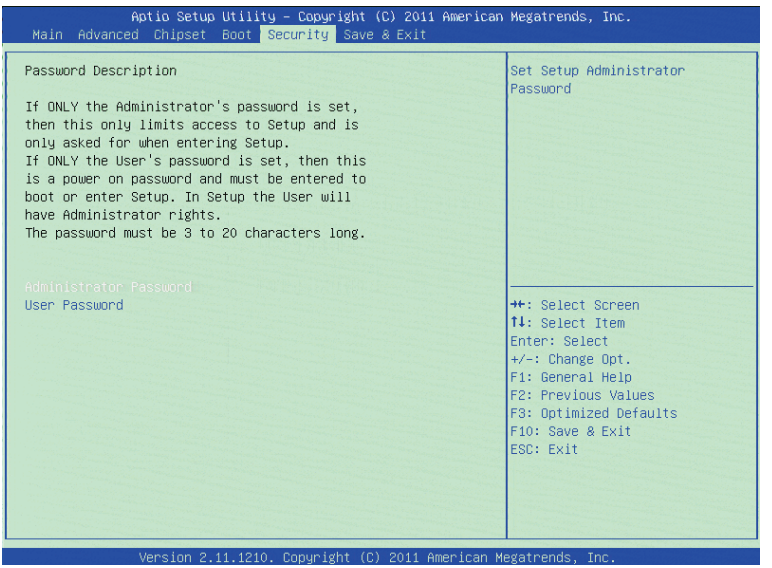
☞ **Interrupt 19 Capture**

Enable/Disable Interrupt 19 Capture

Options available: Enabled/Disabled. Default setting is **Disabled**.

2-5 Security Menu

The Security menu allows you to safeguard and protect the system from unauthorized use by setting up access passwords.


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Password Description
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.
If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights.
The password must be 3 to 20 characters long.
Administrator Password
User Password
Set Setup Administrator Password
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

There are two types of passwords that you can set:

- Adminstrator Password
  Entering this password will allow the user to access and change all settings in the Setup Utility.
- User Password
  Entering this password will restrict a user's access to the Setup menus. To enable or disable this field, a Administrator Password must first be set. A user can only access and modify the System Time, System Date, and Set User Password fields.

☞ **AdministratorPassword**

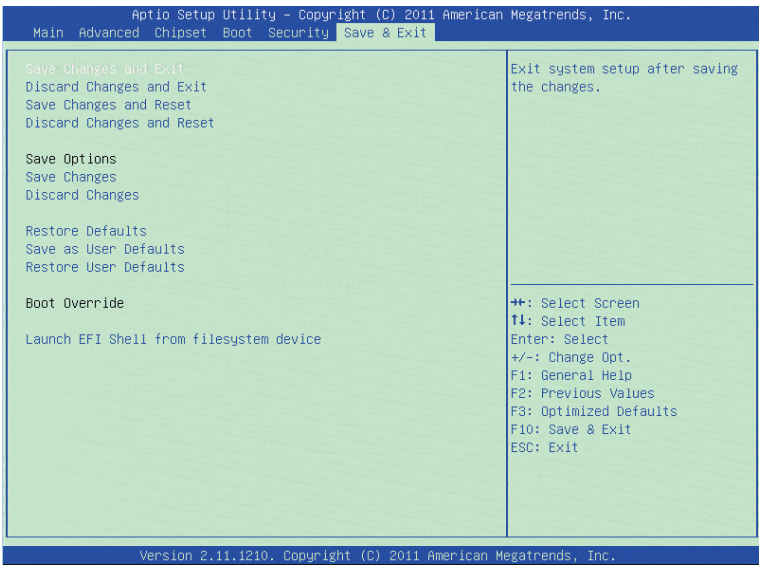
Press Enter to configure the Administrator password.

☞ **User Password**

Press Enter to configure the user password.

2-6 Exit Menu

The Exit menu displays the various options to quit from the BIOS setup. Highlight any of the exit options then press **Enter**.



☞ Save Changes and Exit

Saves changes made and close the BIOS setup and exit system setup.

Options available: Yes/No.

☞ Discard Changes and Exit

Discards changes made and close the BIOS setup and exit system setup .

Options available: Yes/No.

☞ Save Changes and Reset

Active this option to reset system after saving the changes.

Options available: Yes/No.

☞ Discard Changes and Reset

Active this option to reset system after without saving any changes.

Options available: Yes/No.

☞ Save Changes

Active this option to save all the changes.

☞ Discard Changes

Discards changes made and close the BIOS setup.

☞ Save as User Default

Press <Enter> on this item and then press the <Y> key to load user default settings.

Options available: Yes/No.

☞ Restore as User Defaults

Press <Enter> on this item and then press the <Y> key to restore user default settings.

Options available: Yes/No.

☞ **Restore as User Defaults**

Press <Enter> on this item and then press the <Y> key to restore user default settings.

Options available: Yes/No.

☞ **Launch EFI Shell from filesystem device**

Press <Enter> on this item to Launch EFI Shell from filesystem device.